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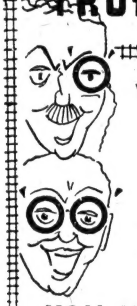

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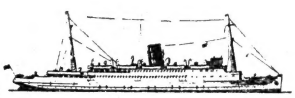

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Model Ships and Power Boats

INCORPORATING *Ships and Ship Models*

EDITED BY EDWARD BOWNESS

VOL III NO 30 JUNE 1950

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The Ship's Log

OUR COVER PICTURE

This month's cover picture, besides illustrating a very beautiful model, also shows how ship modelling appeals to all sorts and conditions of men. This particular model was made by the Hon. Sir Roland Oliver, M.C., some ten or more years ago when he was an eminent K.C. It is significant that when he was in the full tide of his activities building up the name that has since become famous he found relaxation in our hobby. Many famous men in other walks of life find that modelmaking provides an ideal form of recreation and relaxation and gives the opportunity for the creation of beautiful things which is often denied them in the profession they have chosen.

"THE MODEL ENGINEER" EXHIBITION

During the last two years we have provided transport to a limited extent for models from parts of the country outside the London area. This scheme was meant more especially for ship models which are often large and fragile. We find, however, that the cost of the service is prohibitive. We have arranged, therefore, that if the competitor will send his model by passenger train, and advise us of the time of its arrival at any London terminus, we will meet the train with our van or a taxi and collect the model. Models which can be packed to stand ordinary transport should be sent direct in the ordinary way, but the more fragile model or case may use this service. If the model is handed personally to the guard of the train it is practically certain that it will be delivered into our hands with the same personal care which it would have had if we had transported it all the way ourselves.

OUR CONTENTS

We have been criticised both by the power boat and the model yacht fraternities for the scarcity of practical articles dealing with these aspects of marine modelling. It might be thought that our staff should make and operate boats, both power and sail, and write up the results of their experiences. To a certain extent we do, but if the contents of the magazine were limited to this it would soon become stale and valueless. To make a real, live magazine, and to give the greatest possible help to our readers, it is essential that we all take a hand. Numbers of our readers are experimenting and obtaining results which would be intensely interesting to others (competitors, did I hear someone say ?). Even so, it all makes for keener and better sport. Perhaps the other fellow has something of interest, and if he reads your story he will be more ready to tell his own.

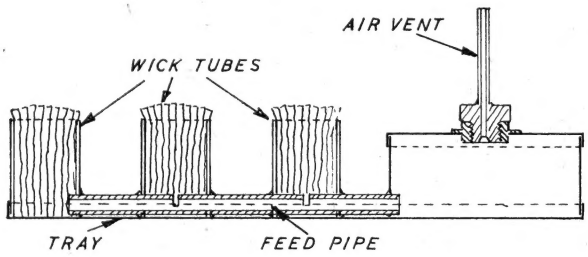
NATIONAL MARITIME MUSEUM

This, our own, museum has always something of interest for the modeller. Last month it was the exhibition of the Society of Marine Artists, who showed some very fine work. Now it is an exhibition of Lifeboats and Lifesaving Apparatus. The various types of lifeboats are often overlooked by the shipmodeller looking for a fresh type to model, but here is a display of models of all types of lifeboats which is sure to present interesting subjects for modelling. The exhibition remains open until June 10th.

*MODEL MARINE POWER PLANTS

by *Edgar T. Westbury*

THE usual form of wick lamp for methylated spirit, if of good design, will generally produce sufficient heat for steaming a simple steam plant, but a good deal will depend on the details of its arrangement, and the various types of lamps all have their own particular merits. It is desirable to keep the actual lamp reservoir cool, and for all but the very smallest plants, the type of lamp which has the reservoir outside the casing is recommended. A lamp which is prone to spilling or belching spirit



A simple three wick spirit lamp

is not a good asset, as it may be the means of starting a disastrous fire when the boat is beyond the reach of the operator.

Self-replenishing types of lamps, such as those fitted with drip-feed or " chicken-feed " are somewhat open to risk in this respect, and should not be necessary for the usual comparatively short runs obtained with a simple plant. Vaporising spirit lamps are much more efficient than wick lamps, and are also reasonably safe, but their greater complication is often a deterrent to their use.

SLIDE-VALVE ENGINES

The orthodox form of double-acting slide-valve steam engine is employed in the great majority of model prototype steam craft, and in addition to affording the nearest possible approach to full-size practice, it is versatile and flexible, and provides ample power for all purposes other than racing, with quite reasonable economy of steam consumption. Even in its simplest form, with only a single cylinder, it gives scope for plenty of variety in detail design, and may be elaborated, by increasing the number of cylinders, and amplification of detail to any extent desired, without in any way altering its general characteristics; practically any size of engine, if properly made and adjusted, will work equally well. In these respects, the steam engine is unique, as other power plants offer much less scope in permissible details of design when reproduced in a small size, and elaboration can only be indulged in at the risk of affecting efficiency and reliability.

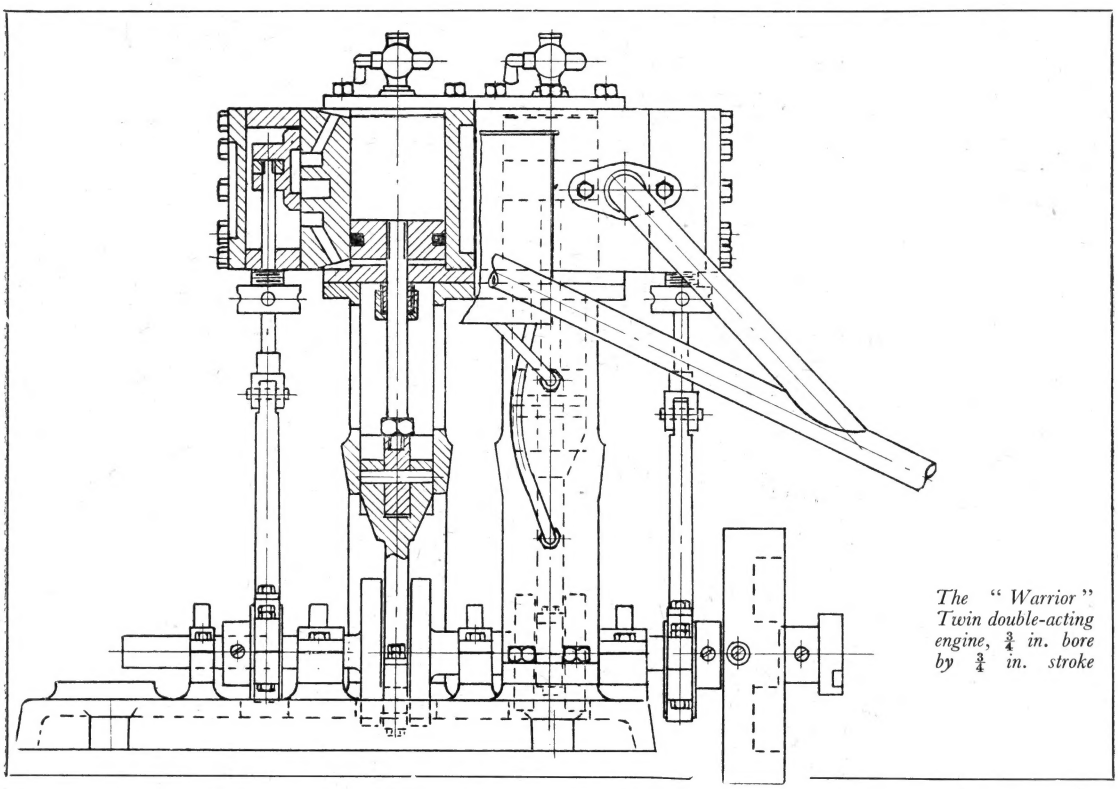
The vertical form of steam engine is almost universally employed in marine plants, being well adapted to direct-coupling to the propeller shaft, and practically the only exception is found in the case of paddle steamers, which may be equipped with horizontal or inclined engines operating directly on the paddle shaft. Even in this case, however, it is by no means uncommon to employ a vertical engine, driving the paddles through worm gearing or some other form of speed-reducing transmission gear. This method, however, is only justified on the grounds of convenience, and the ability to use a standard form of engine; the realism of direct-acting paddle engines makes it well worth while undertaking the extra work in their construction. It may be mentioned that in order to develop sufficient torque to drive the paddle wheels, which must necessarily work at slow speed against heavy water resistance, the cylinders of direct-acting engines should be of ample capacity, and preferably of long stroke, in relation to bore.

Vertical steam engines for marine work are obtainable ready made from many model firms, but the most famous of all are those made by Messrs. Stuart Turner, who have specialised in these products for many years. In addition to some types which are supplied only in a finished state, they cater also for the constructor, with a wide range of castings and machined parts. Apart from the " S.T." oscillating engine of $\frac{7}{16}$ in. bore by $\frac{7}{16}$ in. stroke, (which differs from the engines in this class which were considered last month, by being double-acting, and solidly constructed from castings), the smallest slide-valve engine in this range is the " Meteor," of $\frac{7}{16}$ in. bore by $\frac{7}{16}$ in. stroke, which is suitable for fairly fast boats up to about one metre in length. Other popular engines are the " B.B." all-enclosed ball-bearing engine of $\frac{3}{4}$ in. bore by $\frac{5}{8}$ in. stroke, intended for heavy-duty at high speed, and several larger engines, from the " No. 10," of $\frac{3}{4}$ in. bore by $\frac{3}{4}$ in. stroke, to the " No. 1," of 2 in. bore by 2 in. stroke, also twin (simple or compound) and triple-expansion types. Stuart engines are so well known to the model engineering fraternity that detailed descriptions of these engines are superfluous.

Among other makers of finished engines and construction kits, the names of Messrs. Bassett-Lowke and Bond's o' Euston Road are prominent, and since the war, some interesting lines in steam plants have been introduced by British Industrial Model Services Ltd., of Bournemouth. There are, in addition, several firms supplying castings and materials for the construction of various types of engines, with no provision for supplying finished engines or machined parts.

It has already been emphasised that the pleasure of model power boat construction is enhanced if the engine is also the work of the constructor, and

* *Continued from May issue, page* 44.



The "Warrior" Twin double-acting engine, $\frac{3}{4}$ in. bore by $\frac{3}{4}$ in. stroke

the enthusiast is urged to try his hand at building a steam engine of a more or less advanced type, according to his skill and facilities. There are few engines more interesting to construct than a slide-valve steam engine, and with reasonable accuracy in machining and fitting the working parts, one may be assured of its success when finished. Plenty of variety in the design of such engines, with working drawings and other instructions, is available, and in most cases the engines can be constructed with limited machining equipment.

Apart from the products of the firms mentioned above, it may be helpful to refer to some designs which have recently been described in *The Model Engineer*, such as the "Trojan" engine of $\frac{5}{8}$ in. bore by $\frac{5}{8}$ in. stroke, a type specially suited for the beginner, the castings for which are obtainable from Craftsmanship Models Ltd., Ipswich. A somewhat more advanced engine for fairly large prototype craft is the "Warrior" twin engine of $\frac{3}{4}$ in. bore by $\frac{3}{4}$ in. stroke, the castings of which are supplied by the Imperia Co., of Ilford. It is not within the scope of this general review to describe how to build these engines, but they have been fully dealt with in *The Model Engineer*, and the frequent detailed articles on steam engine construction in this journal will give the novice the necessary practical instruction in this class of work.

POWER OF STEAM ENGINES

Unlike other forms of power plants, steam engines cannot be "rated," except in a purely nominal way, to define their power output within even approximate limits. The power of a steam engine is determined, not by its cylinder capacity, but by the pressure and volume of the steam which it uses; and the practical limit of power output is decided by the strength of the working parts, and the facilities for keeping them lubricated under conditions of heavy duty. In most small marine steam plants, the power obtainable depends upon the evaporative capacity of the boiler rather than the size of the engine. With the types of boilers and burners usually employed in prototype models, the pressure obtainable under continuous steaming conditions is generally not greater than 50 lb. per sq. in., though in many cases higher working pressures are obtained for runs of limited length by using a boiler with plenty of steam reserve capacity, and working up a high pressure before opening up the engine.

To find what power an engine develops under a given set of conditions, we may make use of the well-known formula of $\frac{\text{PLAN}}{33{,}000}$ which gives the "indicated" or internal horse-power. It may, however, be mentioned that this or any other formula should not be regarded as a magic talisman which will dispense with the need for intelligence in solving a calculation problem; as a matter of fact, it is, more often than not, wrongly applied, with the result that a totally fictitious figure for the

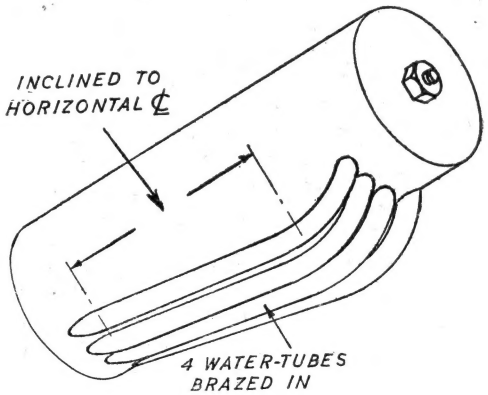
horse-power is obtained. The popular error lies in assessing the value of the factor P (pressure), which is often taken as the actual boiler pressure, whereas it really denotes *mean effective pressure* over the entire power stroke, which is very considerably lower than boiler pressure, even in an engine which admits steam over practically the full length of stroke. If we assume P to be equal to about half the boiler pressure, in such an engine, the result is likely to be far more nearly correct.

In the case of a single cylinder, double-acting engine of $\frac{3}{4}$ in. bore by $\frac{3}{4}$ in. stroke, working at a boiler pressure of 50 lb. per sq. in., at a speed of 500 r.p.m., the formula works out as follows: P = 25; L (length of stroke in feet) = 0.0625; A (area of piston in sq. in.) = 0.44; N (number of power strokes per minute = r.p.m. × 2 in. the case of a double-acting engine) = 1,000:

$$\frac{25 \times 0.0625 \times 0.44 \times 1{,}000}{33{,}000} = \frac{0.0625}{3} = 1/48 \text{ i.h.p.}$$

It should be noted that this figure does not take into account the losses due to friction in the working parts of the engine, which may absorb 25 per cent. or more of the internal horse-power, so that the actual shaft horse-power will be proportionately lower than this figure. By raising either the steam pressure or r.p.m., or both, the power may be increased in direct ratio, but the steaming capacity of the boiler usually limits any substantial increase, and generally speaking, higher engine speeds are only attained at the expense of lowered mean effective pressure, unless much more efficient means of steam generation than are common in model prototype boats are employed.

In such boats, however, the power mentioned above is usually quite sufficient to cover practical requirements, except in the case of fast launches or express cruisers, which are required to run much faster than scale speed, or racing boats where " the sky is the limit "; and these boats, particularly the latter, are usually equipped with specialised high-performance engines and boilers, which will be dealt with later. With the normal type of steam plant, it will be found that much the same power can be obtained over a fairly wide range of engine speed, and with certain reservations, the engine which is effective in driving the large, coarse-pitched propeller of a model tug at a slow rate of revolutions, will perform almost equally well, with the same steam supply, in driving the small, fast-revving propeller of a launch or pinnace. In other words, a limited amount of steam is capable of producing a given amount of work in the engine, whether the latter runs fast or slow, as the internal pressure will accommodate itself to the torque and speed conditions. This accounts for the wonderful flexibility of the steam engine, which enables it to be harnessed to any duty, irrespective of varying torque, as no other power unit can.



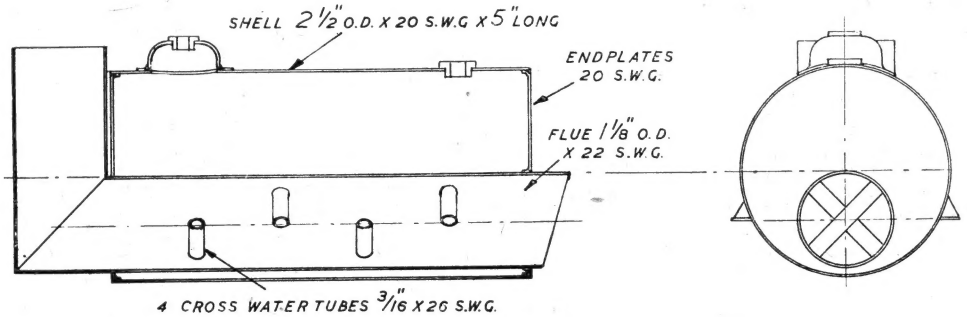
Water tubes brazed into the underside of a cylindrical pot boiler

BOILERS

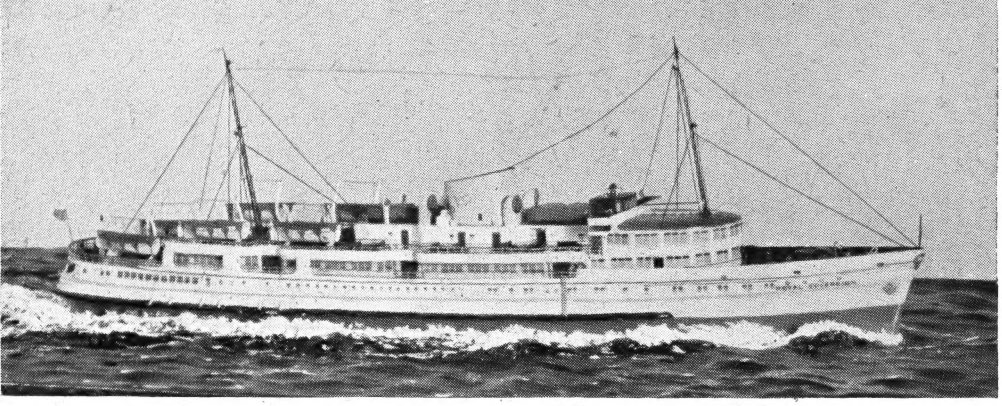
It will be obvious from the above facts that the boiler of a model marine plant, and the method of firing it, are at least as important as the engine itself, and in some cases even more so. The boiler is a rather prosaic part of the plant, and is sometimes given only scant attention, but there are more practical problems in its design and construction than in the orthodox type of engine, in which practically all the factors which affect efficiency have been pretty fully explored, and very little can be done to improve them without departing drastically from the standard features of design.

The simple " pot " boiler can be, and often is, used in conjunction with a slide-valve engine, but the need for a higher steaming efficiency than it can supply is often felt, and the most obvious way of obtaining it is by increasing the amount of heating

(*Continued on page 77*)



A centre flue boiler by British Industrial Model Services Ltd., Bournemouth



Mr. Hampshire's model of the G.S.N. Co.'s "Royal Sovereign"

Notes on Ship Modelling

by Charles Hampshire, M.I.Mar.E., F.R.S.A.

BUILDING models of ships is an art which one can trace back to time immemorial, on the story of which many books have been written, and it is the intention of this article to give a few notes on this most fascinating study and hobby, which appeals to all who have a love of ships and the sea.

One can safely say there has always been a sentimental regard for sailing ships, and for thousands of years human hands have delighted to reproduce the ships of the time in miniature. In very recent years there have come into being numerous ship models societies and clubs in Great Britain and America, whose members are doing splendid work in bringing to the fore this most interesting and instructive study and hobby.

We may divide all ship models into three classes: (1) those which were made a great many years ago and constitute a contemporary record of the ancient ships; (2) present-day models of ancient ships, and (3) models of contemporary ships. It may be of interest to the enthusiast that, with very few exceptions, all ship models from the ancient Egyptian time to the period of the famous diarist, Samuel Pepys, were chiefly constructed with a religious motive, and we to this day can see ship models hanging in some churches as a votive offering.

One has a most varied selection of ships from which to choose, and the writer's advice is never to start to construct before you have obtained full particulars of the selected vessel you are to reproduce. At South Kensington Science Museum one can obtain particulars of practically any type of ship.

Some years ago the writer was asked to construct a miniature model of Sir Francis Drake's *Golden Hind.* There were no drawings in existence, but through the kindness of the curator a drawing of a medallion was found, which was struck to commemorate the exploits of the *Golden Hind*, showing this vessel in bas-relief. From this the writer was, therefore, able to make a drawing and plan to construct a faithful reproduction of this ship.

This article is intended to deal only with miniature models, which, perhaps, is the most fascinating of all the various types. After trying different scales, the writer has adopted that of 64 ft. to 1 in. This scale is large enough to put in a lot of detail, which can be seen with the naked eye, and small enough to be classed as a miniature; also your little ship when put into a glass case can be transported with comfort and ease anywhere.

These small fascinating models can be made with very small financial outlay. White pine or American white wood is very easy to carve, but is rather soft. A better wood is a piece of well matured Spanish mahogany or cedar, but with this the grain has to be very carefully filled in, as the least imperfection shows up in these tiny models. The best method is, just before the finishing touch, to fix the hull on a base piece, which acts as a handle as it were, and the model can then be moved about in any direction during its construction. Thin Bristol board is used to form the decks; this can be bought at any reputable artists' colour shop—enough to build a whole fleet costs only about 1s. 6d. Thin strips of hard white wood are used for superstructure with good quality writing paper for numerous parts of deck details, etc. Wire for stanchions is obtained from a short length of flexible electric light cable; pare off the silk and rubber with a sharp knife, and when the very fine strands of copper wire are smoothed out, they can be used for innumerable parts of the model. Cane skewers are best for the masts and spars, because these can be thinned down to almost a hair and still be stiff and firm.

A special flat modelling paint of all colours, made by Reeves, is most suitable for our little vessel. Rigging the ship is a delicate operation to perform, for no knots can be tied, each rope, halliard and stay having to be cut off the exact size and carefully fixed with a tiny speck of quick drying varnish.

A number of mediums can be used for rigging—human and horse hair, thin strands of silk prepared in a special way to keep stiff, and even minute strands of glass silk have been adopted by the writer. Best quality tissue paper for the sails—a tube of Croid glue, or Durofix, a fine pair of tweezers and a sharp pointed knife. All the above mentioned material can be obtained very cheaply. Now comes the most important ingredient of all, and that is infinite patience, with a steady hand. All this, properly applied, will give many happy hours with something to show as your reward.

Ship Model Prototypes No. 8

Banana Boat T.S.S. "Camito"

by J. E. Jane

Owners : *Elders & Fyffes Limited.*
Builders : *Alex. Stephen & Sons.*
Built : 1915.
Length : 435 *ft.*
Beam : 53 *ft.*
Depth : 36 *ft.*
Registered Tonnage : 6,611.

THE liner as a model power boat, is always a refreshing sight, whether on the exhibition stand, or on the pond. The following remarks, therefore, are mainly intended to draw the attention of the prospective builder to yet another type of vessel of this class as a possible subject for his handiwork.

The Elders & Fyffes Line, which came into being approximately at the turn of this century, have always enjoyed the reputation of owning vessels of singular grace and beauty. None were very big, the tonnage ranging between 4,000 and 7,000, but owing to symmetrical lines, and colouring, they had the appearance of being larger.

Although specifically designed for fruit carrying, they also handled Royal Mail and have accommodation for a limited number of passengers.

The *Camito* was one of the largest of the Fleet, which, at the time of her early existence, numbered 25. Unfortunately, she became a total loss in the late war, after giving 25 or more years' of good service. Completed in 1916, she came off the stocks direct into Government service, to keep company with her sister ship, the *Bayano*, which was employed as an armed merchant cruiser. 1920, however, saw her once more returned to the owners, and, resplendent in the company colours, she commenced her legitimate duties, sailing from Avonmouth, the home port, to the West Indies.

I do not intend here to do more than merely draw attention to one or two important points, as the construction would mainly be a matter for the builder's fancy.

It will be appreciated, of course, that in order to stand up to handling, and rough water, model power boats should be reasonably large. It will also be appreciated, that the bigger the model, the more robust can be made the fittings, thus greatly decreasing the possibility of damage. The dimensions for the model given on the drawing are for a scale of $\frac{1}{16}$ in. = 1 ft., but for a working model they

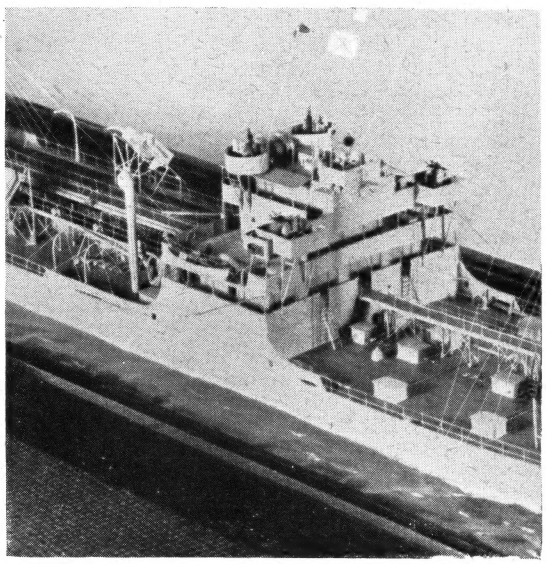
(*Continued opposite*)

SHIP MODELS AT SHEFFIELD EXHIBITION by "Jason"

The highlights of the Easter Exhibition in the ship model section were to be found in the general high standard of work, the strong outside challenge, particularly from Birmingham and the outstanding successes of one model in particular. I think the number of entries was down on last year but in view of reports about work on the stocks this is not surprising. *The Birmingham Ship Model Society* sent their 1949 "M.E." exhibition team entries, viz., The Spanish Carrack (A. E. Field), winner of the 1949 sailing ship cup; the Topsail Schooner (C. J. Clarke), 1949 silver medallist, and H.M.S. *Valena* (A. North Hardy), 1949 bronze medallist. These models were much admired and carefully scrutinised. The Spanish Carrack was the runner-up in the Open Trophy. It was a water-line steamer, however, which secured the premier honours. The tanker *Beaconstreet*, which may be remembered by visitors to the 1949 "M.E." Exhibition, is a model to a scale of $\frac{1}{16}$ in. to the foot. Yet the deck details are carried out in a first class standard of miniature craftsmanship. The maker, Mr. D. S. Anthes, is to be heartily congratulated on winning no less than four of the premier honours of the exhibition. These are (a) The Open Championship Cup (all sections and all comers); (b) The Open Trophy (the best ship model, all comers); (c) The Ship's Bell (the best ship model of the year by a member of the Society); and (d) The Ship Model Section Prize (awarded by the organisers of the exhibition). The photograph shows what a fine job it is. To win the Open Championship Cup is quite an honour for the *Sheffield Ship Model Society*, for there are thirteen sections in the exhibition. Among other awards I should mention Mr. Money's new venture, a squat and bulky Mississippi river steamboat, *Robert E. Lee*. Serious modellers will look askance at this kind of work in a pickle bottle, yet much ingenuity must have been displayed in building up the model inside the bottle.

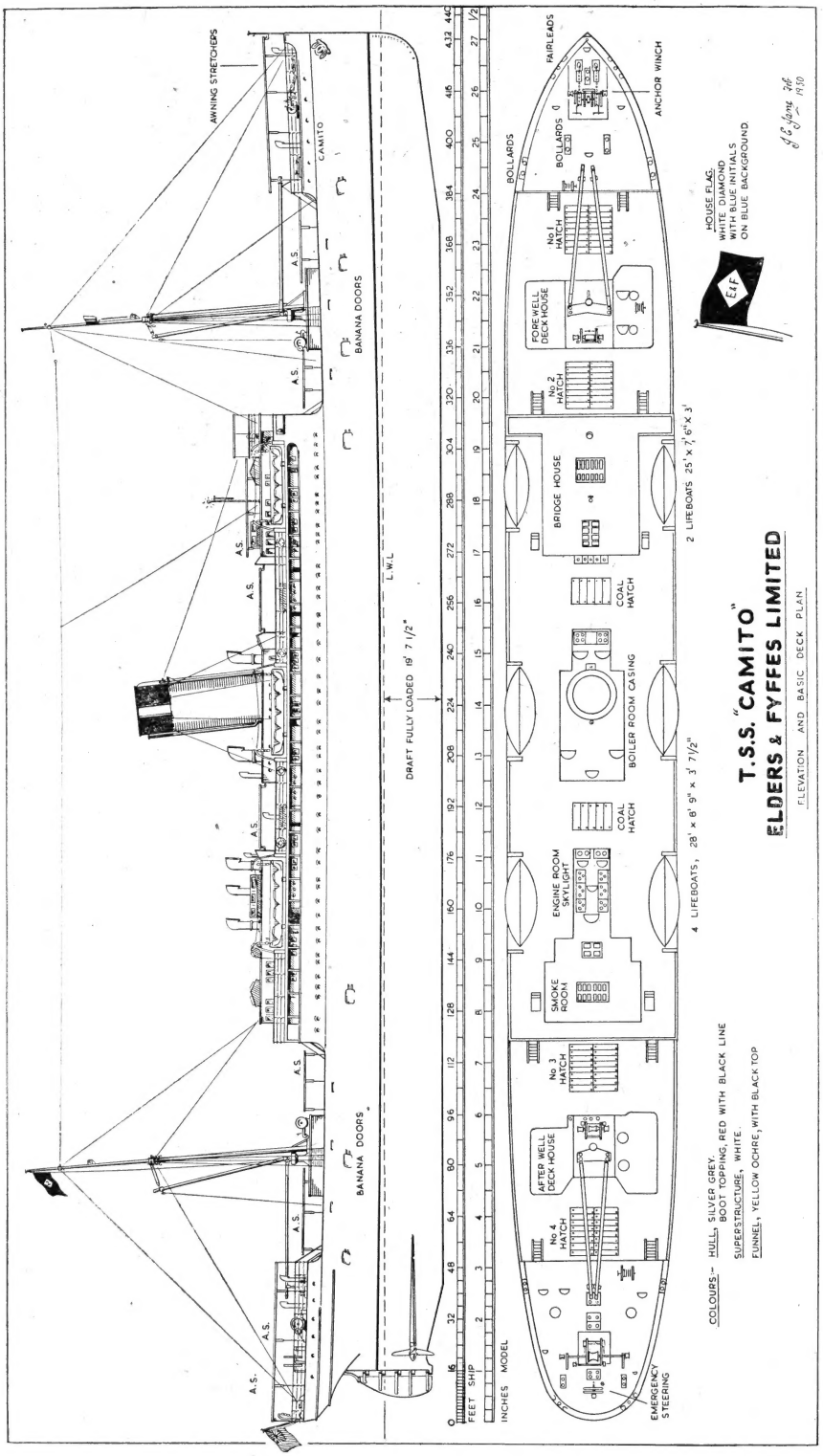
Among new members' work I noticed a Wool Clipper, by Dr. Lee. This shows promise, but lacks finish.

The exhibition was organised by the Sheffield & District Society of Model & Experimental Engineers, with the co-operation of the Sheffield Ship Model Society.



Craine Photo

The bridge of Mr. Anthes's model, Beaconstreet



could be doubled with advantage. It should, however, be noted that a slight increase in beam and displacement could be permitted in order to obtain greater stability.

The illustration shows the general characteristics, but the deck plan has been simplified to indicate only the main essentials.

It will be noticed that awning stretchers are in position for almost the entire length of the vessel. In the banana boat, owing to tropical service, these are virtually a permanent fixture, and consist of wooden longitudinals, and cross battens supported by stanchions. Also of interest are the "banana doors," of which there are seven on each side of the hull, allowing access to the main 'tween deck, for easier handling of the cargo.

COLOURS

Hull, silver grey from water line to promenade deck ; Boot topping, red with thin black line ; superstructure, white ; masts, yellow ochre ; derricks, yellow ochre ; lifeboats, white ; funnel, yellow ochre with black top ; awning stretchers, white ; Note house flag, which is a white diamond, with blue initials on a blue background.

The Shipmodeller's Scrapbook

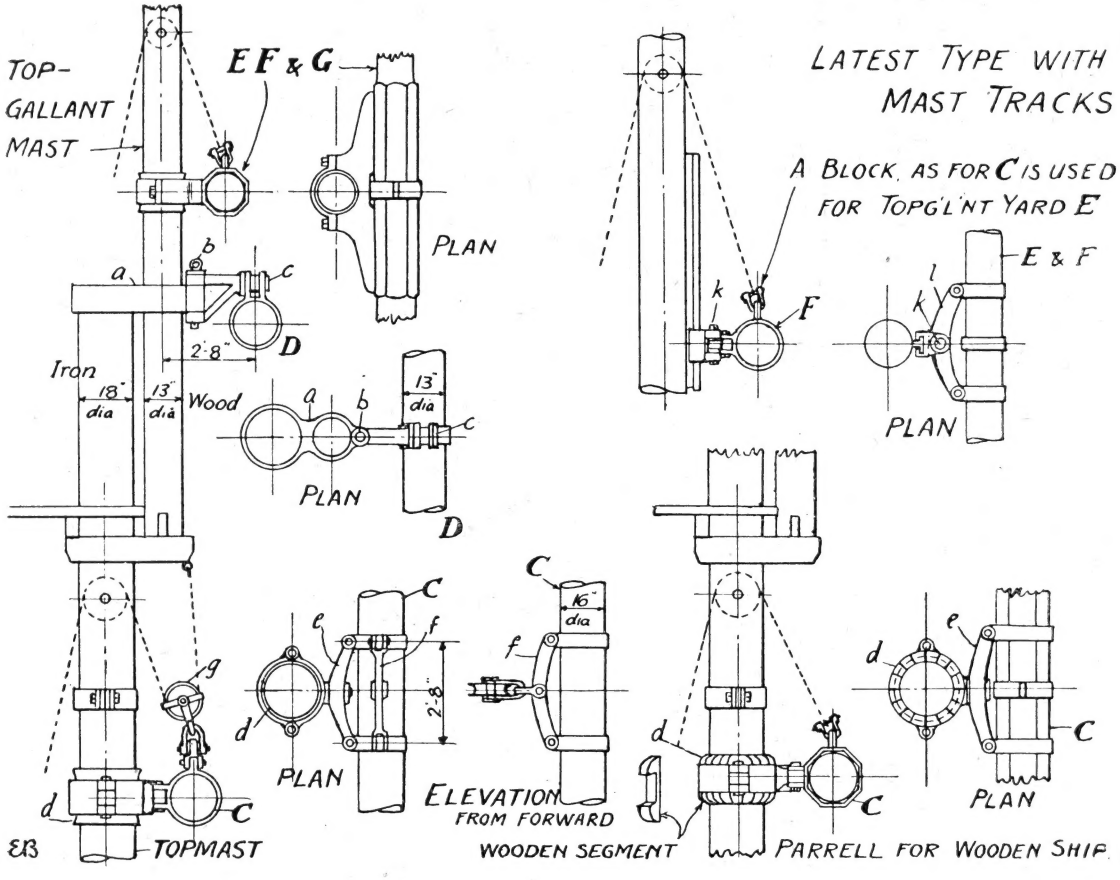
*MAST AND YARD FITTINGS

TO conclude the discussion of mast and yard fittings from our last issue, we have prepared the accompanying drawing showing the fittings for the upper yards. The sketch on the left shows the doubling at the crosstrees with the fittings for yards *C, D, E, F,* & *G*—see the diagram in last month's issue—as seen from the starboard side. The dimensions on this sketch are approximately correct for a ship of 1880 of about 1900 tons register. The lower topgallant yard *D*, being fixed as to its height, was carried on a truss similar to that which supported the lower topsail yard *B*. The topmast cap *a* had a boss on its forward side to carry the swivel pin *b* on which the truss for the yard was hinged. The yard was hung from the horizontal pin *c*. In the later ships the yard was sometimes carried above the horizontal pin instead of below as shown in the sketch, probably because it offered less interference when furling the sail along the yard.

The upper topsail yard *C* was secured to the mast by a parrel *d*, which consisted of a split hoop encircling the mast, lined with leather which was greased to reduce the friction as the yard was hauled up and down the mast. On its forward side the parrel had a horizontal pin on which was pivoted an arched forging *e*, which was bolted to eyes on the yard bands. On the upper side of the yard a similar arch *f* was provided to carry the block *g* through which the halliard was rove. The fixed end of this halliard was shackled to the crosstrees and the hauling end was passed over a sheave in the mast and led down to the deck. In older ships with wooden topmast the parrel was lined with wooden segments instead of leather. The arch *e* was similar to that in the later ships but the halliard was shackled

(*Continued on page 72*)

* *Continued from May issue, page 56.*

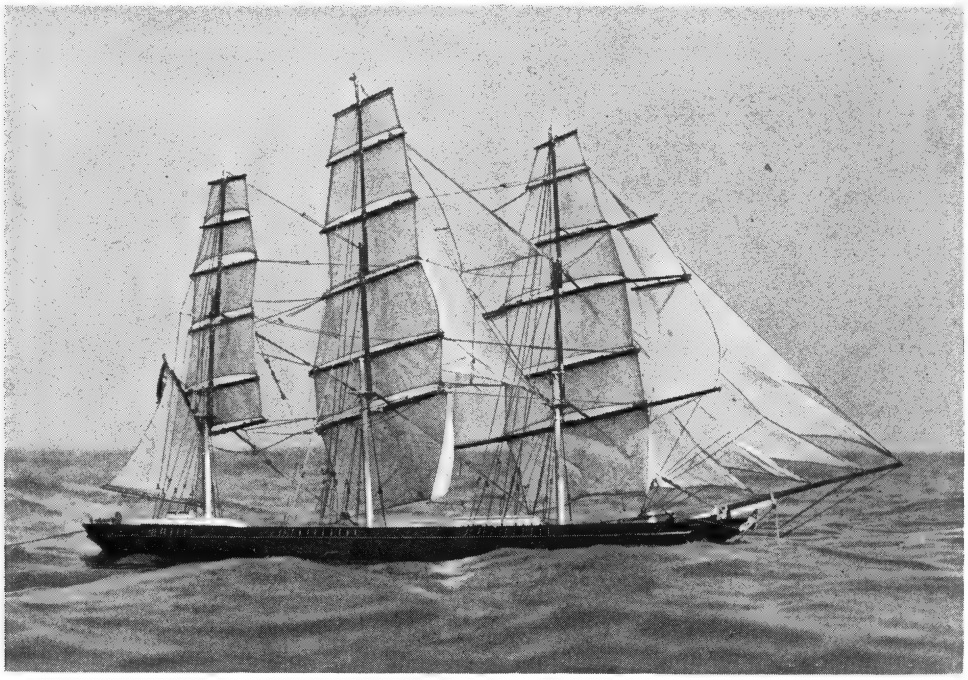


DIMENSIONS ARE APPROXIMATELY CORRECT FOR A SHIP OF 1880, ABOUT 1,900 TONS

THERMOPYLAE

A Sailing Model Clipper Ship — *by Graham Henley*

EARLY one summer morning, in those far off days before the war, a strange vehicle, a car trailer with a Cape cart hood, stood by the water's edge on an otherwise empty Sussex foreshore. From this was lifted a remarkable square rigged model ship, which I learned was to 1/48th scale of the ill-fated clipper ship *Caliph*, believed to have been lost to Chinese pirates on her maiden voyage in the early 60's. The model was launched in a deep pool left by the falling tide, where revelling in her element, this little ship with a showcase finish sailed like a witch. Filled with admiration I asked if I could take some photographs, which resulted in a most interesting and unusual holiday. *Caliph's* owner and I became friends, and halcyon days were spent offshore in a dinghy, away from the bathers, sailing *Caliph* and his other models, a four-masted *Wendur* and a *Cutty Sark*, a beautiful little ship. One day I heard a woman who was bobbing about in the water say: " Fancy those men playing with all those little ships." One of " those men," the owner and builder of these model masterpieces was then an eminent K.C., and is now the Hon. Sir Roland Oliver, M.C., who has given permission for this so well remembered episode to be recounted here.



THERMOPYLAE

A sailing model of the famous racing clipper ship, built from 1/48th scale plans bought at the South Kensington Museum

Length between perpendiculars	...	53	*in.*	*Raised quarter deck*	...	...	$15\frac{1}{4}$ *in.*
Beam	...	$9\frac{1}{4}$	,,	*Topgallant forecastle*	...	...	$8\frac{3}{4}$,,
Depth	...	...	$5\frac{3}{16}$ *in.*				

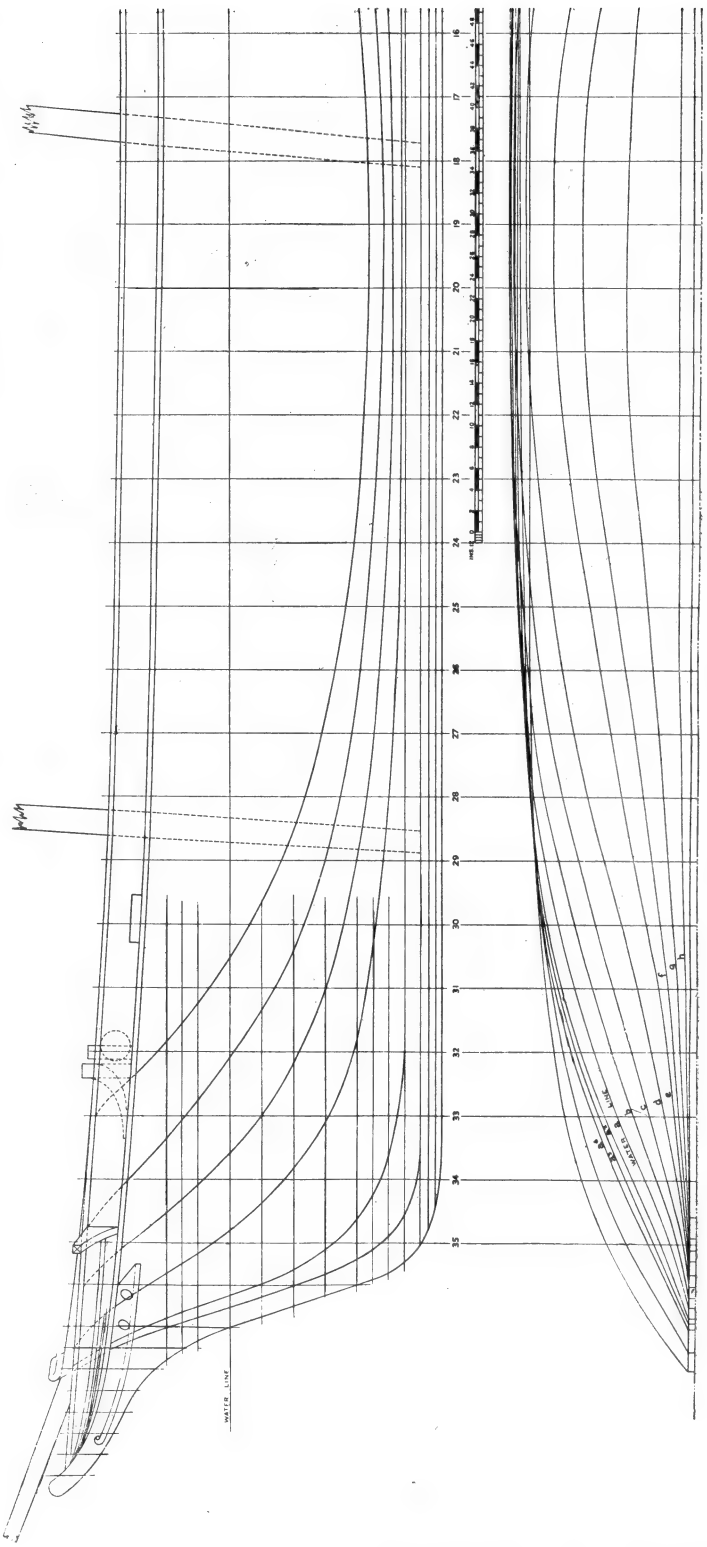
His ships were built on the " bread and butter " system, trued to the correct shape by templates traced from the sections of the shipbuilders' plans, all to 1/48th scale, being fastened with cold water glue. About this time he began building to the same scale, a model of an extreme American clipper from the lines of the notorious *Challenge*, a ship

that could not be improved on by any modern ideas in streamlining, though she was launched in 1852.

This news decided me, and an idea I had been nursing for some time, sent me to the Science Museum, South Kensington, in search of some rival clipper's builder's lines. The only lines available were of *Thermopylae*, winner of the 1872 race with *Cutty Sark* from Shanghai to the Downs (through the latter losing her rudder) . . . which seemed to meet the requirements of the situation, and I began reading up all I could find about her to get a mental picture before commencing operations.

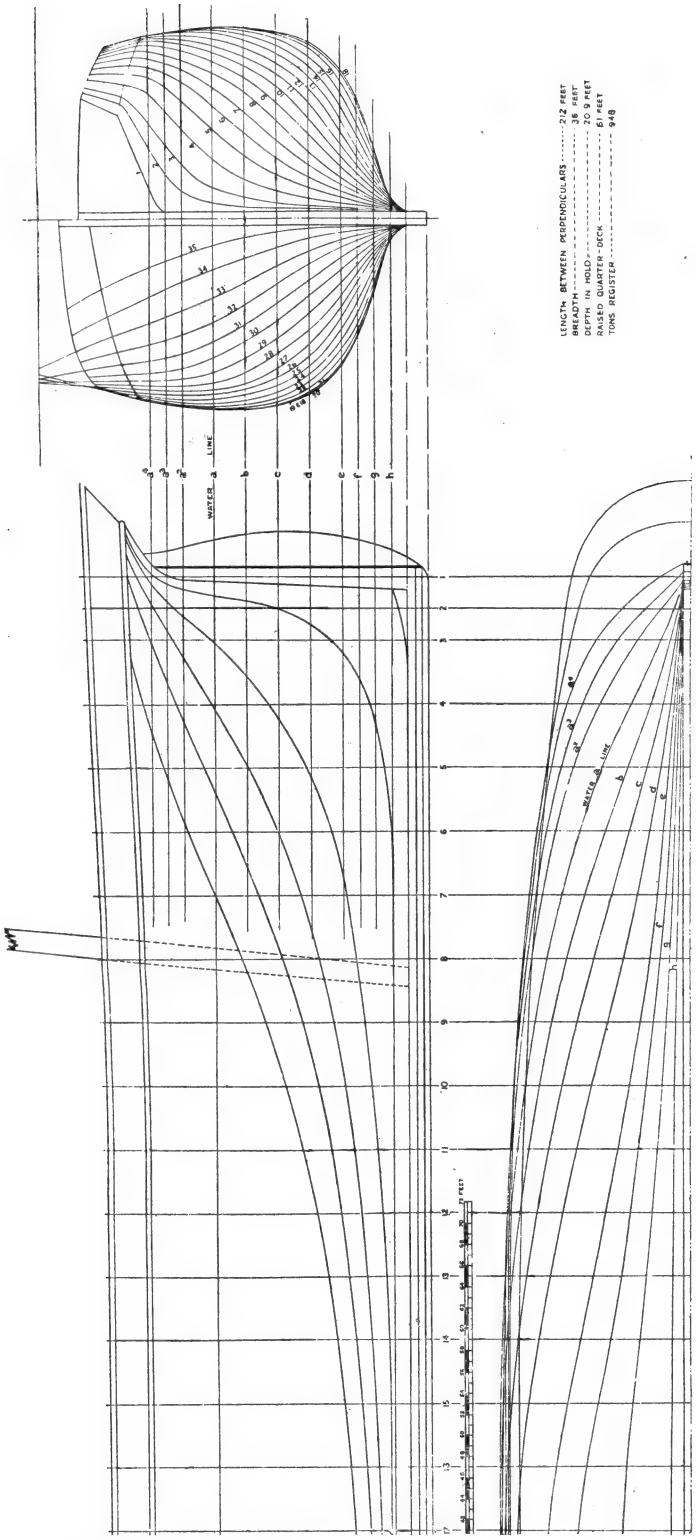
The great *Thermopylae* began shortening the time interval between widely separated points on the globe in the closing years of the clipper ship era, the golden age of sail. She was launched at Aberdeen on August 19th, 1868, a composite clipper built by Hood for Thompson's Aberdeen White Star Line from the design of Bernard Waymouth, Secretary of Lloyd's Register, a free-lance designer. Under her noted skipper Captain Kemball, she left Gravesend on November 7th, 1868, for Melbourne, arriving there in 63 days, a record which has never been broken. On February 10th, 1869, the ship left Newcastle N.S.W., with coal for Shanghai, anchoring there 31 days later, the usual clipper run being 45 to 55 days. On July 3rd of that year *Thermopylae* left the Pagoda anchorage, Foochow, with tea for London, docking there in 91 days, to find herself more admired, praised and discussed than any ship ever launched. The owners sold the ship to the Mount Redford Milling & Refining Co., of Victoria, B.C., in 1890, who, seven years later, sold her to the Portuguese Government to become the training ship *PedroNunnes*. On October 13th, 1907, she was towed out of the Tagus and sunk by torpedoes, after 39 years afloat, leaving a sea memory of beauty and achievement that has become an imperishable legend.

The scale of $\frac{1}{4}$ in. to the foot, is, from observation at the Kensington Round Pond and elsewhere, the minimum for a prac-



Reproduced by courtesy of The Science Museum

Hull lines of Thermopylae

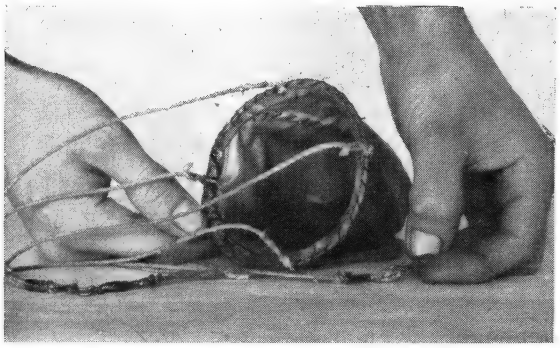

LENGTH BETWEEN PERPENDICULARS ..... 71'2 FEET
BREADTH ..... 36 FEET
DEPTH IN HOLD ..... 20'9 FEET
DRAUGHT ..... 17 FEET
TONS REGISTER 648
WATER LINE

Hull lines of Thermopylae

Reproduced by courtesy of The Science Museum

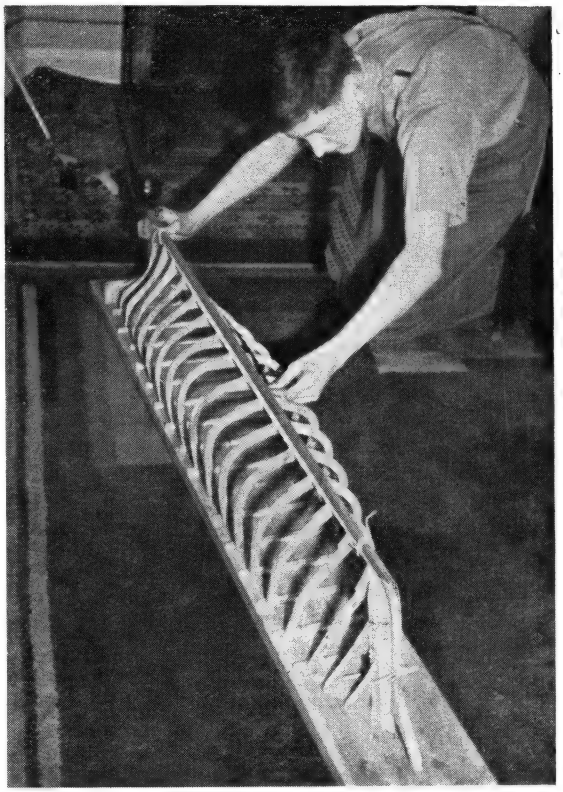
tical sailing square-rigged ship model; smaller scale craft being too fragile aloft and most unimpressive in rough water, bobbing about like toys through lack of displacement. A 1/48th scale ship lifts and plunges, swings across the swell, heels and fights back to squalls, behaving like her prototype; a sight that wrung an involuntary exclamation of admiration from a golfing friend who had been unable to understand my love of the little ships. All *Thermopylae's* sailing having been done off the Sussex coast, handled from a dinghy, the golfer rather incautiously found himself at the oars of the dinghy last summer, whilst photographs were taken. The rather incautiously refers to the really hard work entailed in catching up with the model when she has a "bone in her teeth," and after one grim and desperate pull to windward towards Dungeness, to head off the rapidly diminishing clipper flying across the water under her stun'sails. Since then I have made a small drogue for her to tow and which she will have to continue towing until the outboard engine can be used again. Another lesson well learned by experience, is, that a larger ship than this model would be nearly impossible to lift from the water into the dinghy; a procedure very necessary when going ashore through a surf; and as a precaution against total loss by foundering in deep water, a cargo of Kapok in canvas bags was stuffed in the hold of the ship, although to date *Thermopylae* has never shipped more than a quart of water.

Building the ship began in the orthodox model yacht manner, on a 6 ft. by 10 in. by 1 in. building board, which had one surface planed and carefully tested in both directions for truth, the plank being well seasoned to keep it so. A centre line was marked the length of the board, and across this line were marked at right angles 17 "stations" corresponding to those on the half breadth plan, starting with number 35 and working aft, leaving a clear foot of board forward to mount the stem piece. Number 34 was drawn 1½ in. aft of 35, then at 3 in.



Left : *Drogue for limiting speed of model at sea*

Below : *Hull ready for planking*



intervals—32, 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6 and 4. These stations marked the positions of the sections, as shown on the Science Museum plans, and along these lines temporary pine beams were nailed to the building board. The ribs were then traced on to white cardboard from the sections on the body plan corresponding to the 17 stations, numbered for position, and carefully cut out, the outboard portions cut away being useful later on as templates. These " shadows " were next laid on odd pieces of $\frac{3}{4}$-in. thick elm (from a boat building yard) and the ribs drawn to shape on the wood, each of these half sections being gripped in a vice for sawing out with a hand saw, used slowly and with great care. Each piece was cut the same depth to keep the keel line parallel with the building board, and was not reduced by the thickness of the planking, so that the model is actually $\frac{1}{4}$ in. too wide in the beam. The extra displacement, however, is an advantage in a sailing ship in miniature, buffeted by a non-scale wind and seaway.

SHIPMODELLER'S SCRAPBOOK

(*Continued from page* 68)

to a band at the middle of the yard, the block not being necessary. as the yards were smaller and lighter.

The remaining yards *E*, *F*, and *G*, had a simpler form of parrel. The yards being of wood, a long wooden facing was fixed to the yard. It was hollowed on its after side to fit the mast and a metal clamp was bolted to it to keep it up to the mast. It was lined with leather which was greased to enable it to slide easily on the bare wooden mast.

In the latest ships the yards *C*, *E* and *F*, had no parrels encircling the mast but were arranged to slide up and down on a tee-shaped steel track which was secured to the forward side of the mast. The sliding piece carried a vertical pin *k* and the yard was supported by an arch *l* bolted to hoops on the yard. The central hoop carried the eye to which the halliard block was shackled. The royal yard *F* had no block, the halliard being shackled direct to the eye on the yard hoop. The skysail yard *G* was, of course, unknown on ships of this period.

TRADE TOPICS

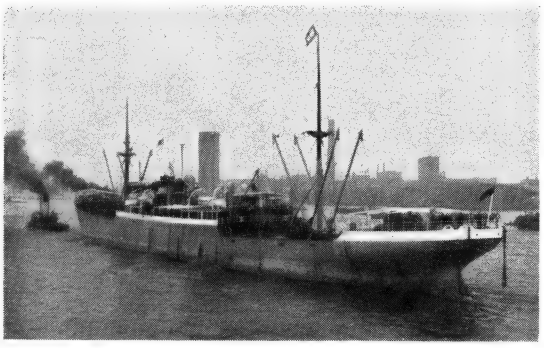
We have received from *Messrs. Lance and Mullett*, of Brighton, one of their kits for building a 36-in. restricted class yacht. The design is from the board of Mr. T. Lance and embodies all the features that make for success in racing this class. The hull is of the Sharpie type, and is arranged for the Braine steering gear. Every detail is well thought out and the kit is as complete as any we have seen. The materials are well chosen and are of first class quality and most of the wood is cut to shape and will require very little finishing. The builder will, of course, provide his own building board, but the moulds on which the hull is built are provided, cut to the finished dimensions. We understand the finished yacht can be built from the kit in from 10-30 hours, depending on the skill and experience of the constructor. We are enjoying the building of our kit and will have more to say about it when it is completed. In the meantime we can thoroughly recommend it.

Ships in the News

by Laurence Dunn

THE Ben Line fleet, which has recently celebrated its centenary, was once the last stronghold of the clipper-stemmed cargo liners. All of three island type, with a single tall funnel and slightly raked fidded masts, the series reached its climax in the 4,798 ton *Benrinnes*, of 1914. With her sale in 1938 the distinctive stem disappeared from the fleet, but somehow much of the same elegance was maintained in the ships which they built in the twenties and thirties.

The 6,318 ton *Benledi*, which was recently burnt out near Malta, and became a constructive total loss, was one of these. She was built by Connell's in 1930, and had a speed of 12 knots. Latterly her appearance was enhanced by the new colour scheme adopted by the company and which consisted of a grey hull, apple-green boot-topping, while the



S.S. Benledi

familiar buff funnel and masts over varnished and grained upperworks were retained. With her loss the 29-year old, 6,214 ton *Benreoch* became the owner's only ship of this type and period.

Now the backbone of the fleet is made up of a group of eight new and fine looking 16½ knotters, each with a cargo capacity of 10-11,000 tons. The latest of these, the *Benalder*, has recently been completed by Connells. Among their slower ships, which include several *Liberties* and *Empires*, there have been a number of changes. The 6,638 ton *Benrinnes*, which they bought from Furness Withy's in 1938 as the *London Exchange*, has just been sold to India and renamed *Fatakada*. Her place has been taken by the former Henderson liner *Pegu*, a 14 knotter of 7,838 tons, which has just been renamed *Benattow*. She is a comparatively new steamer, having been built by Denny's as recently as 1943.

Hitherto the Ben Line has never owned any coasters, but now they have broken away from tradition and bought the little 1,130 ton *Polperro*, built only last year at Bristol for Cornish owners. Renamed *Benveg* and modified for Far Eastern waters, she has been sent out to Bangkok for local feeder service.

* * *

CLYDE COASTERS

A remarkable number of Clyde Shipping Co. vessels—past and present—have been in the news lately.

Following the delivery of new tonnage, the latest of which is the machinery-aft type, M.V. *Sanda*, built by the Caledon yard, they have sold their well-known steamer *Fastnet*. Built in 1928 and having a tonnage of 1,415, she has been bought by the Belfast, Manchester and Mersey S.S. Co. Ltd., and renamed *Greypoint*.

This latter firm, whose fleet has largely consisted of second-hand Clyde Shipping Co. vessels, has weeded out its two oldest units. One, the 45-year old *Rathlin*, which they bought in 1933 and until now trading as the *Greypoint*, has gone to Clyde Shipbreakers. Their 1,200-ton *Mountstewart*, built as the *Pladda*, and purchased in 1936 has also been sold. Her name has been given to the former *Somerset Coast*, a 1,097-ton machinery-aft type steamer which they have bought from Coast Lines Ltd.

Yet another former Clyde Shipping Co. trader is up for sale. She is the 1,497-ton *North Down*, owned by the Mountain S.S. Co. Ltd., of Belfast, a subsidiary of G. Heyn & Son. Ltd., better known as the *Copeland*, she was built in 1923. With her sistership, the *North Tipperary*, since disposed of, she was bought by her present owners in 1946 for their cargo and cattle service to the Benelux countries.

* * *

On May 9th, the 26,032-ton Canadian Pacific liner *Empress of Scotland* sails on her first regular voyage from Liverpool to Quebec. For two years she has been in the hands of Fairfields, her builders, undergoing a most extensive refit. With the smaller *Empress of Canada* and *Empress of France* (both former *Duchesses*) weekly sailings will now be possible during summer and autumn, but in winter the ship will make cruises from New York. Originally the *Empress of Japan*, she was famous as the largest and fastest liner operating in the Pacific. The entry of Japan into the war caused her to be renamed in 1942.

Externally there have been but few changes, the house-flag has been painted on the funnels, the blue ribbon on the hull is now green and the promenade deck has been glassed in. Internally the alterations are very great and instead of the former 1,115 passengers she can now only accommodate 663. With one of her six boilers kept in reserve, she is capable of a service speed of 20¼ knots.

* * *

The former Hamburg Amerika liner *St. Louis*, is to be broken up in Germany after having served for several years as a hotel ship at Hamburg. This 16,732-ton, two-funnelled motor ship, which was

built in 1929, suffered severe damage during R.A.F. raids on that port.

Her sistership, the *Milwaukee*, was surrendered to Britain, put under Cunard White Star management and renamed *Empire Waveney* in 1945, only to be destroyed at Liverpool when she was refitting.

* * *

Since the war the Indo China Steam Navigation Co. Ltd., has started a new system of naming for its ships. Instead of the familiar "*Sang*" suffix, their latest ships have names commencing with *Eastern*.

Their newest and largest vessel, the 7,800-ton *Eastern Queen*, was launched by Denny's early in April.

A turbine-driven ship, 468 ft. in length overall, she will have the high speed of 17 knots. Besides accommodation for about 60 first-class passengers, provision is also to be made for about 830 deck and steerage passengers.

An interesting feature of her design is the incorporation of special anti-piracy precautions in her midship structure.

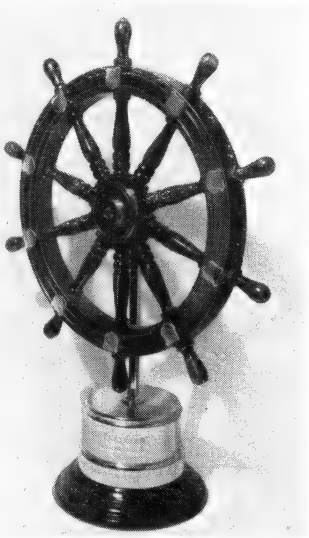
* * *

The vogue of the two-funnelled cross Channel Packet is quickly passing and few are now left on the North Sea and English Channel routes. Now it is announced that when the former L.M.S. steamer *Duke of York* finishes her temporary summer service between Southampton and Cherbourg she is to be altered to fit her for the Harwich-Hook route. She will then be converted from coal to oil and is to have one of her two funnels removed. Extra sleeping accommodation will also be fitted.

Originally designed for the Ulster-Heysham service, she was built at Belfast in 1935. During the war she served as a L.S.I. (Landing Ship Infantry) and to avoid confusion with the battleship of the same name was temporarily renamed *Duke of Wellington*.

SHIP MODEL SOCIETY NOTES *by "Jason"*

The Ship Model Societies' Challenge Trophy is pictured here. It is a fine piece of work about 20 in. high. It will be won outright in 10 years time by the ship model society which wins it the greatest number of times over the whole period. The trophy is held during the year by that society scoring highest marks at *The Model Engineer* Exhibition. The purpose of this trophy is to encourage all members of a society to submit their work for exhibition but marks are awarded for models in accordance with established standards of craftsmanship, so that mere numbers of entries will not get very far unless the work is good. The system of marking is similar to that which is followed by the judges for the team prize, i.e., cup, medals and diplomas each have a definite value in marks. Your society secretary, therefore, must not forget to nominate the entry models; the best three models for the team prize and all the society's models for the trophy, but they must be nominated, otherwise entries will not be included for either of these prizes. If your engineering society has a ship model section organised as such, that section would be eligible for competition. One important and final point. The trophy is exclusively for ship models, whereas the team (limited to three entries) is open to any kind of competitive entry by any society. New societies like *Cardiff*, *Reading*, *Leicester*, *Ipswich* and *Bromley* equally with the veterans like *Liverpool*, *Glasgow* and *Bristol*, can show their paces just as *Sheffield* and *Birmingham* have already done.



Steering Wheel Trophy for Ship Model Societies

A New Hatch Grating Method. Mr. Shields, of Sidmouth, Devon, sends me a new method of grating-making in the medium and lesser scales which I gladly pass on. It has some advantages and is well worth a trial. A thin veneer, say 1/32 in. thick, is the basic material. Mr. Shields gets his from the tobacconist. In boxes of cigars there is usually a thin sheet of cedar 1/32 in. thick between each layer of cigars. "Finish" the sheet by sanding smooth and "prime" with a suitable filler. "Size" one side and when dry, pin down to the drawing board. Mark off the squares with a very sharp and hard pencil. Now cut out the squares with a chisel ground down to your required size of square, alternatively, use a piece of razor blade held in arterial forceps. Don't forget that old hacksaws are admirable chisels when ground and set. Cut the grating to fit the combing. Add a ledge inside the combing to take the grating. If a solid hull, then fit the combing over a blackened hole for this adds to the effectiveness and gives the impression of depth. Thank you, Mr. Shields.

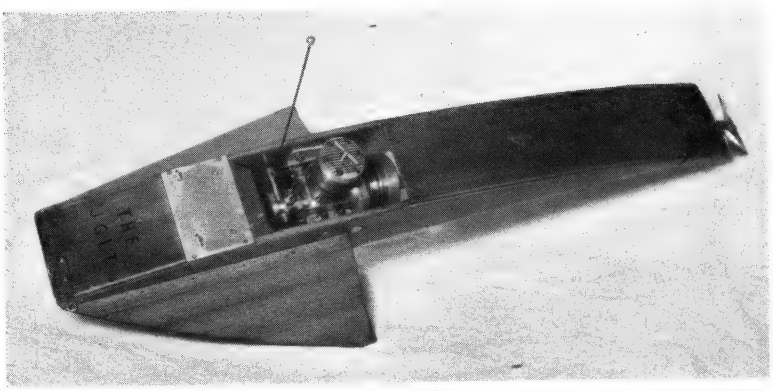
Wembley. On June 12th, Mr. Wurr will talk on "Cardboard Modelling," at the monthly meeting, on Saturday, June 17th. *Wembley S.M.S.* invites all to join them in a trip to the National Maritime Museum, at Greenwich (by water bus). Write to Secretary, W. O. B. Majer, 81, Paxford Road, North Wembley.

The Bromley S.M.S. now meet at St. Mary's Church House, College Road, Bromley, Kent, (first Monday, 8 p.m.). They hold their first exhibition, October 7th, in their new headquarters.

The Solent Shiplovers' Society invite visitors to Southsea, Pompey, and Southampton to look in at their exhibition, June 17th-July 4th, at Southsea. If you have an entry to submit write to Secretary, E. N. Taylor, 41, Vale Grove, Gosport, Hants, but in any case you are welcome.

The Clyde Shiplovers' and Model Makers' Society held their annual exhibition of ship models recently. It is good to see that they have recovered somewhat from their serious loss of models by fire some time ago. There is a probability that London will see some Clydeside entries in this year's "M.E." Exhibition, and, such is their craftsmanship, they would be a strong challenge for team honours.

An Experimental "D" Class Hydroplane



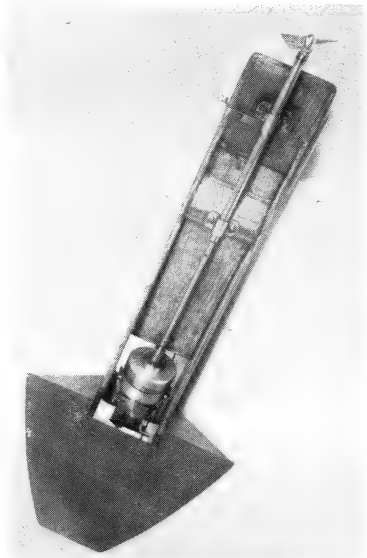
WE illustrate herewith an unusual but highly successful 24-in. hydroplane built by Mr. Walton, of the Kingsmere Model Power Boat Club. As most of our readers are aware, this club specialises in the miniature type of hydroplane, and several of its members have succeeded in producing remarkable performances with hulls powered by commercial engines of about 2 c.c. capacity. Mr. Walton was one of the founder members of this club, which started with five members just over one year ago, but has now grown to five or six times its original size, with keenness and activity as strong as ever.

The first hull built by Mr. Walton started with a speed of 5 m.p.h., which, by patient experiment, using the same 2 c.c. engine throughout, was eventually raised to 17 m.p.h., using a submerged propeller. This performance was later increased by 100 per cent. by using a surface propeller.

In the latest hull, illustrated here, experimental work has been facilitated by providing fore-and-aft adjustment of the engine, within a latitude of 1 in., also adjustment of the height of the skeg, and the angle of the propeller shaft. A universal joint is fitted forward of the skeg, the latter being made integral with the propeller bracket.

The planing angles of this hull have been increased, and whereas the original hull had a step $\frac{1}{4}$ in. deep, later increased to $\frac{1}{2}$ in., the height of the step is 1 in. in the new hull. It is located at a distance of $9\frac{1}{4}$ in. from the bows of the hull, as compared with $8\frac{1}{2}$ in. in the earlier hull. The maximum beam is $8\frac{1}{2}$ in., giving a very large planing area, but the hull is only 3 in. wide at the tail. Weight of the boat complete is $2\frac{1}{4}$ lb.

An unusual feature of the hull is that aft of the step, no floor is fitted, and as shown in the underside view, the whole of the engine and transmission system is open to the water. This has been done with the idea of cutting down drag, and the results appear to be successful. A vane is fitted vertically on the starboard side of the tail in order to improve stability.



View of underside of "Jolt"

The compression-ignition engine fitted to this hull is of 4.7 c.c. and is entirely home-constructed. With the extra power available from this engine, a speed of 41 m.p.h. has already been attained, and it is anticipated that when the optimum adjustments have been arrived at in respect of centre of gravity, planing and thrust angles, the performance will be greatly improved. A large capacity fuel tank is fitted forward of the engine, and the fuel pipe is led from the starboard side to avoid the risk of starving the fuel supply under the effects of centrifugal force.

The engine runs in an anti-clockwise direction, and the boat runs anti-clockwise round the pole, with the forward line of the bridle tight and the rear line slack. The tenacity of Mr. Walton as an experimenter may be judged from the fact that he has made over 200 visits to the Kingsmere pond on Wimbledon Common from his home at Tolworth in the last two years, in the course of making running tests.

Readers interested in the construction and running of ultra-miniature speed boats should note that the M.P.B.A. have now given them official recognition, by instituting the "D" racing class, with an engine capacity limit of 5 c.c., for either petrol, compression-ignition or glow plug engines.

Since going to press with this article, we have been informed by Mr. Walton that in recent trials of this hull with a $3\frac{1}{2}$ c.c. commercial engine, a speed of 51.5 m.p.h. has been attained.

This he considers is by no means the limit which can be reached.

FOR THE BOOKSHELF

SHIP MODELS

Edited and published by Robert A. Nash, at 22, South Baldwin Avenue, Sierra Madre, California, six times yearly at 35 c. per copy or $2.00 a year.

We have received three copies of this very interesting magazine. Presumably it may be obtained in this country through the various agencies. A feature of the magazine is the reprints from old books on ships, No. 1 containing a contemporary description of the *Sovereign of the Seas*, 1637; No. 2, numerous tables giving dimensions of old guns; and No. 3, tables giving dimensions of hull, masts and spars, rigging, anchors, etc., of a 100-gun and a 90-gun ship of 1790. Other articles include one on building a model of a Grand Banks schooner (this has a folding plate of plans) one on Capt. E. A. McCann, and one on photographic methods in miniature modelling. This is certainly a magazine worth having and one which will stimulate the ship modeller's interest in his hobby.

* * *

THREE MILE LIMIT

By David Cobb

Published by Phoenix House Ltd., London. Price 12s. 6d.

If, as our readers will all agree, one of the finest joys of life is " messing about in boats " then one of the next best things is to study a book such as the one under review. We say study advisedly, as this is not a book to be merely read and laid aside—it is a book to which one will come back time and again and browse over with delight. The illustrations, too, are a joy and are well in keeping with the character of the book. To the ship-modeller they are full of information, chiefly because the artist-author has been associated with ships and the sea almost all his days, and even now he is living in a 13-ton cutter at Newlyn. He thus looks at a ship with a practical eye and his drawings show gear and rigging which is accurate and reliable and contain none of the mistakes which are so frequently seen in artists' drawings of ships. Where all are so good it is, perhaps, misleading to pick out any particular one, but the ship-modeller will feel he could almost rig a model from the lovely drawing of the schooner *Elizabeth Drew*, on p. 82. As the title indicates, the book deals with the craft around our shores to be seen within the three mile limit, and thus the illustrations show chiefly the smaller craft, both sail and power. This is certainly a book to have, to hold and to enjoy.

* * *

FLASH STEAM

By Edgar T. Westbury

Publishers: *Percival Marshall. Price* 3s. 6d.

From time to time articles on this very fascinating subject have appeared in *The Model Engineer*. These have now been collated and rewritten and much new material has been added. The whole forms a very interesting and a very useful book. As a motive power flash steam has for some years been overshadowed by the i.c. engine, but there is a tendency for it to come back, and in this connection the appearance of this book is very timely. Moreover, although the author's name is connected with a number of successful designs of i.c. engines, his knowledge of, and interest in steam engines is equally great, and his book will be of the greatest value to anyone wishing to exploit the possibilities of steam. That these possibilities are worth exploring is proved by the consistent successes of certain flash steam enthusiasts who have, for years, competed successfully against boats powered by i.c. engines. The book is illustrated by a number of very clear line drawings of many types of engines, and is extremely good value at the price.

* * *

THE SHIPMODELLER'S WORKSHOP

By R. K. Battson

Published by Percival Marshall. Price 3s. 6d.

Mr. Battson's previous book on *Period Ship Modelling* has been very well received and we feel confident that his new book will be equally successful. This is a book on methods and materials used in ship modelling, and embodies the results of the author's 25 years' experience both as an amateur and professional ship modeller. The items which deal with the various parts of a ship are arranged in alphabetical order and are illustrated by the author's sketches. These are very clear and illuminating. Various ways of making each part are described and in many cases the development of the particular part, from ancient to modern times, is briefly outlined. The sections on materials, painting and rigging are especially useful. The book is a worthwhile investment, both for the beginner and for the experienced shipmodeller.

* * *

THE HISTORY OF MODEL POWER BOATS

By Edgar T. Westbury

Publishers : *Percival Marshall. Price* 3s. 6d.

This book, which is to some extent a reprint of the series of articles the author wrote for Model Ships and Power Boats during 1948, will be of interest to all power boat men, especially to those who have followed the hobby from its early days. Those who are most keenly engaged in the latest developments will also find it extremely interesting as it is always profitable to study the way things have developed.

The book traces the history of power-driven models from the beginning, describes the various types of power plant used, the introduction and development of the i.c. engine, the gradual increase in the speeds attained and concludes with an interesting chapter on modern tendencies, and a set of photographs of notable personalities in the hobby with their models.

Editor's Correspondence

DEAR SIR:

I see in Mr. Russell's letter in the April number of MODEL SHIPS AND POWER BOATS, that he understands that a scale model will not sail satisfactorily unless one increases the beam and depth.

Well, I think he need not be afraid of it not doing so as I have a scale model of *Thermopylae*, 3 ft. long and 6 in. beam. Now the beam of my model is one-sixth of her length and she is full rigged on all three masts and is weighted down with lead to her loaded water line and she sails well and steers perfectly, I keep the head sails, that is the jibs, a little tighter than the squaresails, so that when close hauled the head sails spill the other sail and stops her from coming up in the wind and staying over. On a few occasions I have seen her taken aback but when she came aback she backed stern first up in the wind and came round again on the right tack. This reminds me of reading in Basil Lubbock's books of the skipper of the *Titania* in a river in China ; it was said he never put her about but laid his yards aback and sailed her up stern first on the one tack and pulled his yards back on the other tack and saved putting her about, the river was so narrow. Now if the beam of Mr. Russell's model works out a third or fourth of her length she should be more stable than a ship of one-sixth beam to length, I also have a model of *Cutty Sark* 5 ft. long, and she carries 36 lb. of lead and wants 1 in. of her plimsoll mark, but I have not sailed her often as it takes a long time to trim all the sails and ropes in their proper places.

The model of *Thermopylae* is rigged with endless fall braces, the braces are rove through little blocks on the masts and are fixed to each yard arm so that when the tacks and sheets of the three lower squaresails are let go the whole of the sails come round like a swivel. Hoping this will help Mr. Russell in the making of his galleon.

I am,

Yours faithfully,

Shetland Isles. JOHN SMITH

Editor's Note. *Owing to shortage of space further correspondence must be held over until next month.*

MODEL MARINE POWER PLANTS (*Continued from page* 64)

surface in the boiler. This can be done by adding either internal or external tubes to the plain cylindrical boiler, or by totally redesigning it on more efficient lines. In the popular Smithies type of water-tube boiler, the tubes are brazed into the lower part of the boiler shell, and consist virtually of U-tubes having one leg inclined at a fairly shallow angle, with the object of promoting rapid circulation of the water. As these boilers usually work at a higher pressure than simple pot boilers, the use of soft solder in their construction is not advisable.

Alternatively, tubes may be brazed either vertically or obliquely through and across the boiler shell, forming flues which bring the hot gases from the burner into contact with increased areas of boiler surface. In both these types of boilers, it is possible to use methylated spirit wick lamps or vaporising burners, the latter being preferable on account of their higher combustion efficiency.

An even more popular form of boiler for model marine plants is the centre-flue type, which is not suitable for firing with the usual forms of spirit burners, but can be fired very efficiently by high-intensity paraffin or petrol vapourising burners. It is probably due to the efficiency which can be obtained with such burners in an internal boiler flue or furnace that the centre-flue boiler has attained and held such a univeral popularity, but an equally important virtue of this boiler lies in its large water and steam capacity, which makes for steady steaming, and a good reserve of both steam and water. It is possible to keep an engine running for several minutes even after the burner has been extinguished, thereby minimising the risk of the boat stopping out of reach of the operator; while the large water reserve makes feed adjustment less critical as compared with many other types of boilers.

Centre-flue boilers vary in details of design, and in many cases water-tubes are fitted vertically and obliquely across the main flue to increase heating surface as much as possible. In a further attempt to improve efficiency, boilers are often made with a combustion chamber at the back of the furnace flue and a bank of return tubes leading to a smokebox and uptake over the mouth of the furnace, in the manner of the well-known Scotch marine boiler which is very extensively used in full-size practice. It is, however, rather difficult to obtain the advantages of the extra heating surface thus obtained, except in fairly large model boilers, as the tubes tend to restrict draught and thereby interfere with proper combustion.

The weight of centre-flue or return-tube boilers, in relation to their evaporative capacity, is rather excessive for boats in which a high power/weight ratio of plant is desirable, and in order to reduce this, various types of water-tube boilers, either following fairly closely on prototype designs, or specially designed to suit small-scale conditions, have been used with more or less success in fast model power boats.

(*To be continued*)

News from the Clubs

THE MODEL YACHTING ASSOCIATION

At the forthcoming *Model Engineer* Exhibition, in August, the committee will be Messrs. Littlejohn, Hooper, Pragnell and Bauer.

The association wish, with deepest regret, to record the sudden death of Mr. G. Howard Nash, after a serious operation on Good Friday. This much respected gentleman was a most prominent and active figure in the sport. To his wife and family the association respectfully extend their most sincere sympathy and condolences.

THAMES SHIPLOVERS & S.M. SOCIETY

On Wednesday, April 26th, Mr. R. C. Anderson, the well-known authority on restoration ships, lectured on "The Galley from Ancient Times." This was a very enlightening lecture on a difficult subject, and the lecturer made his various points much clearer by sketches on the blackboard. The large audience showed a keen interest in the subject, and a number of interesting questions were asked in the discussion which followed. The ship modellers' meeting on April 13th was addressed by Mr. E. T. Westbury, who gave a very useful talk on "Power Plants for Model Boats." The only meeting in June will be that of the Ship Model Section on the 8th, when the speaker will be Mr. E. Bowness, who is talking on "Planking Hulls." An excursion is being arranged for Whit Saturday, May 27th, to the shipyard of Messrs. Pollock, of Faversham. On Saturday, July 1st, there will be a tour of the King George V dock, to see a number of interesting ships, and on July 30th a visit to the *Queen Elizabeth*, at Southampton is being arranged. The ordinary lectures will be resumed in September.

THE MODEL POWER BOAT ASSOCIATION

Fixtures for June are as follows: Sunday, 11th, International at Victoria Park, London, E.; Saturday, 17th, Coventry M.E.C., at Naul's Mill Park, Coventry; Sunday, 18th, Altrincham M.P.B.C., at Heston Park, Manchester; Sunday, 25th, Blackheath M.P.B.C., at Prince of Wales Pond, S.E.3.

BOURNVILLE MODEL YACHT & POWER BOAT CLUB

The Bournville Club opened the 1950 season with a contest between yachts representing the Commodore, versus yachts chosen by the Vice-Commodore.

In a south-westerly gale two ships of the 6-metre class and two of the 36-in. class opposed each other, whilst, as an experiment, one ship of the 10-rater class opposed each of the 6-metre craft. (The gale was a severe test, particularly to the small type of yacht, and it is to the credit of the latter that they not only survived the storm, but emerged with superior points.)

The result, in favour of the Commodore, was *Brota* (W. H. Ray) and *Dare* (A. Davis) gaining 14 pts., and *Chance* (G. Leeds) and *Ethel* (M. Fairbrother), 10 pts.

TYNEMOUTH M.Y. CLUB

Fixtures for June include The Porter Medal for prototypes (June 11th) and the Pyle Cup for hydroplanes (June 25th). Starting times for all competitions will be 10.30 a.m.

THE BIRMINGHAM M.Y. CLUB

On Saturday, April 1st, the first trophy race of the season was held at Witton, for the Cole Cup for Marbleheads. In ideal weather conditions, eight boats were keenly competed. Results were close, with the winner, Mr. Haller's *Sparky*, gaining 25 pts. It is interesting to note that the boats taking the first five places carried Vane steering gear.

NORFOLK AND NORWICH M.Y. CLUB

On Sunday, March 19th, the first round for the Bird Cup took place, with twelve boats representing Norwich, Yarmouth and Lowestoft. Despite a strong S.W. wind, sailing was keen, the final scores being, Norwich 99 pts., Lowestoft 72 pts., and Yarmouth 64 pts.

PAIGNTON & DISTRICT M.Y. CLUB

The summer season was opened on Sunday, April 2nd, with racing for the open 10-rater Royal Torbay Yacht Club's silver rose bowl. Although the weather was rough, some good sailing was enjoyed, resulting in D. Pensent's *Trixie* winning with 39 pts. This club has got the council interested in their proposition to build a lake entirely for model yachting. The next open water event is on October 15th, when it is hoped clubs further afield will send in entries.

THE COVENTRY M.E. SOCIETY

The third annual regatta will be held on Saturday, June 7th, at Nauls Mill Park, at 2 p.m. For details of events, write to the hon. regatta sec., F. J. Robinson, 42, Crossway Road, Green Lane, Coventry.

SOUTHEND-ON-SEA MODEL P.B. CLUB

The regatta held on April 16th, at Southchurch Park, lake resulted in C. Richardson's *Revenue Cutter* winning the steering event with 8 pts., J. Starkey's cargo steamer coming first in the nomination event with 0.83 per cent. error; and in the point-to-point event, B. Waters was the winner with his cargo steamer. The r.t.p. speed competition was won by S. Jones with his 5 c.c. hydroplane, at 21.3 m.p.h.

BRADFORD M.Y. CLUB

Racing was held throughout the Easter holiday, the Bradford Cup being won on Good Friday, by T. B. Eales's *Susie II* (Barrow-in-Furness); on Saturday, the Clapham Cup was won by D. A. Ripley's *Darius* (Bradford); on Sunday, the Claro Cup was won by D. A. Rupley's *Darian* (Bradford), and on Monday, K. V. Chadwick's *Mallard* (Bradford) won the Victor Cup. There were competitors from Barrow-in-Furness, Morecambe, Bolton and Huddersfield.

THE WICKSTEED M.Y. AND P.B. CLUB

On Sunday, April 30th, an open event for 10 Raters was held to compete for the Timpson Trophy. The final results, after two rounds, were :—L. A. Garrett's *Laguna* (Wicksteed) 1st with 41 pts. ; R. M. Sear's *Falcon* (Bedford) 2nd with 36 pts. ; and L. Toseland's *Undine* (Wicksteed) 3rd, 28 pts. O.O.D. at this event was Mr. R. Hillerby.

The annual power boat regatta will be held on Sunday, July 2nd, and commences at 11 a.m. ; entries same day. Anyone wishing to book lunch and tea should write to the Power Boat Secretary, D. Ward, 5, Noble Avenue, Irthlingborough, Northants, by Saturday, June 24th.

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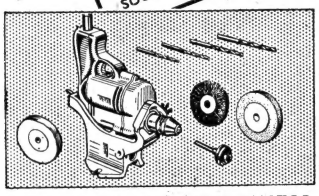

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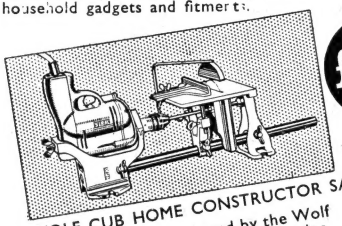

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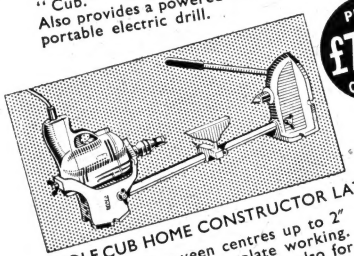

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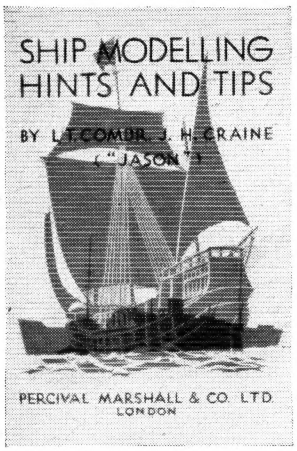

The aim of this book is not to describe the making of any particular ship model or class of models but to indicate to the constructor the best methods of approach to the subject, the best methods of construction, and to guide him safely through the many pitfalls which beset his path. Nothing is so disappointing to the shipmodeller as to find, when he has at last finished his model, that it is full of anachronisms or that everything is not just shipshape and Bristol fashion. A careful study of this book will be of the greatest help.
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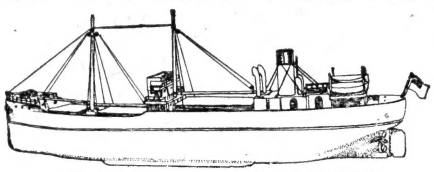

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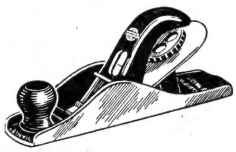

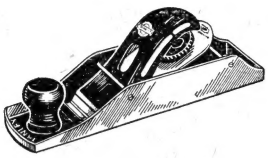

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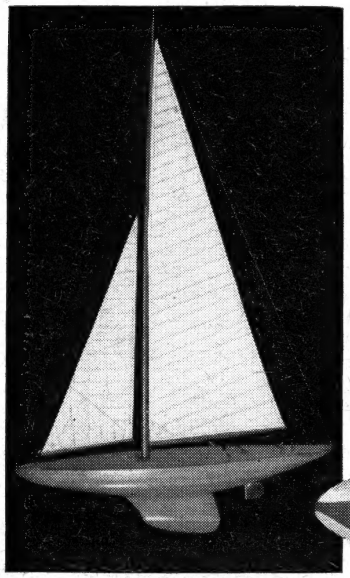

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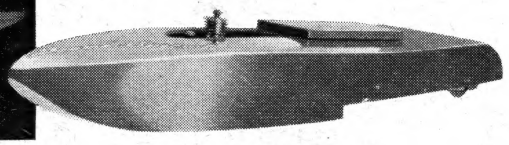

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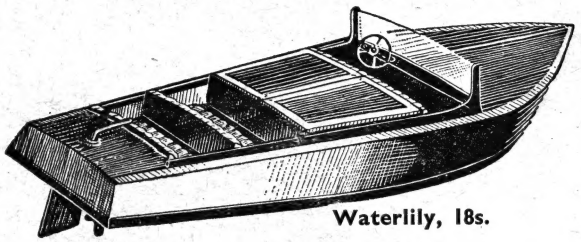

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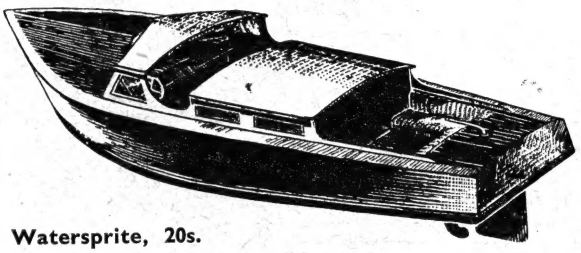

Watersprite, 20s.

Also Available

Sidelights, flanged, ¼ in., **3d.** ⅜ in., **4d.**, ½ in., **4d.**, ⅝ in., **5d.**, plus tax. Propeller assemblies from **3s.** to **5s.**, plus tax. Rudder assemblies from **9d.** to **2s. 6d.**, plus tax.

Full particulars of constructional kits of launches, cabin cruisers, steam yachts, etc., can be obtained from your local dealer or direct from the manufacturers.

The latest model to be added to this range, is "The Dolphin," a 31 in. high-speed cabin cruiser, suitable for motors of from 2 c.c. to 5 c.c., price **42s. 6d.**

MODELLERS SUPPLY LIMITED

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